1. A method of displaying a simulation on a PC, comprising the steps of:

   providing a PC user with an applet which has display and Internet communication
   functionality;
   providing the user with initial data for the applet to use in the display of a presentation,
   the bulk of that initial data being provided to the user before the applet is used to display
   the presentation, the data being incomplet.,
   operating a game server to communicate with the user's applet;
   maintaining a virtual account for the user, certain data being sent to the user only if the
   status of the account is satisfactory;
   using the game server to obtain a result in response to a request from the user's applet,
   the request containing data about the user or the simulation or both;
   using the game server to send a ticket to the applet, the ticket containing data that is
   representative of the result;
   the game server using the result to modify the user's account;
   the applet using the data in the ticket to complete a presentation to the user comprising
   at least the visual display of a result and a visual update of the users virtual account.

AUSTRALIA

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Invention Title:

METHOD, SOFTWARE AND APPARATUS FOR A ROBUST SIMULATION OF A SLOT MACHINE GAME

FIELD OF THE INVENTION

The invention pertains to methods of electronic gaming and more particularly to a computer network implementation of a slot machine.

BACKGROUND OF THE INVENTION

Entertainment services, particularly gaming services, are among the most economically viable forms of commerce being transacted on computer networks such as the Internet. Lottery games, casino games, gambling and games of chance in general are well represented in the electronic traffic traversing the global networks. The demand exists for ever more entertaining and innovative implementations of games and games which can be marketed to the widest possible audience. In particular, popular or well known games or their variants are desirable because they can be played without the need for extensive player instruction and because people tend to prefer games they know and understand.

Slot machines are one of the most popular games of chance. Slot machines are played, in various forms, across the world. Professional market research has indicated an enormous demand for slot machine like products which could be delivered to and played with a networked computer. One technical challenge is to devise methods of processing and displaying information in a manner which suits the player in an Internet or other network environment. Other challenges relate to the specifics of accountancy and record keeping with regard to a players account, which account is kept electronically and reliably in a situation where data flow over the network can become interrupted or cease without warning. Another challenge is to devise a system of display which mimics, as closely as possible, the appearance of a physical slot machine and which meets player (and web site operator's) expectations for realism, speed of play and entertainment value.

The other problem to solve is to design an entertainment presentation that had a basis in conventional presentation, but which also includes certain novel elements in the delivery of a bonus.

OBJECTS AND SUMMARY OF THE INVENTION

It is an object of the invention to provide a device for playing a slot machine-like game, software for executing the implementation of this game and the necessary interface for player operation.

In summary, a Java applet displays a game on a player's screen. The player makes a request, in one form or another, to a game server. A game server delivers a "ticket" to the player's computer. For the purpose of this disclosure, a "ticket" is a digital electronic message which provides, when decoded, data in a pre-determined format which can be interpreted by the applet. Directly upon issuing the ticket, the game server accounts for the play, it having calculated the end result before issuance. In response to the ticket, the applet alters the display in a number of unique ways.

In a preferred form, the ticket includes both general and specific data.

In another preferred form, the player's's request includes both general and specific data.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

Figure 1 is a depiction of a screen display of a three reel slot machine simulation on a PC..
Figure 2 is a depiction like Figure 1 showing a bonus winning display.
Figure 3 is a depiction of a bonus screen display prior to a bonus award.
Figure 4 is a depiction of a bonus screen display after a bonus award.
Figure 5 is a of a frame of a possible bonus screen animation after a bonus award.

BEST MODE AND OTHER EMBODIMENTS OF THE INVENTION

The invention pertains, in part, to the software and hardware required to implement a simulation of a existing type of gaming machine on a PC. In this particular example, a three reel slot machine is discussed. The three reel slot machine is one that is familiar to many people and therefore is both a reasonable example for the purposes in this document and commercially acceptable. It is intended that the teachings provided here can serve as the basis for simulations of other forms of entertainment including other mechanical gaming devices and machines without limitation. Equally, these teachings can serve as the basis for new forms of electronic commerce, new forms of gaming and new forms of entertainment.

In a typical mechanical three reel slot machine, the user faces a machine then inserts one or more coins. The user pulls a handle and sets the reels in motion. In any one of a number of ways, the reels stop and a result is displayed. A monetary payout is made according to the display.

A PC is clearly powerful enough to present images and sounds which are representative of a mechanical machine. A PC is also arguably powerful enough to (with the correct software) generate random numbers, allow a user to fully simulate the use of a mechanical machine and account for the outcome.

Without the Internet however, the PC simulation mentioned above, has limited commercial value. One reason is that the user would otherwise have no practical spontaneous way of financially interacting with anyone other than himself. The Internet allows the user to interact spontaneously with commercial gaming operations, entertainment providers and financial institutions.

An Internet implementation of this kind of slot machine simulation requires a fundamentally different approach than the one taken for the PC. While the PC could handle the tasks of generating an outcome which could potentially be binding on an Internet site operator or financial institution, the user's PC is unsuitable for these tasks for practical, legal and commercial reasons.

The solution to the PC's unsuitability for these certain tasks is to allocate the tasks to more specialized computers operated remotely from the user and operated by a commercial entity. This approach is acceptable, in principle to users and commercial entities. However, actual

commercial acceptance depends on the speed and reliability of data transfer between the user and the remote computer. If the rate of data transfer is too slow, the user will not use the system at all because not enough entertainment per unit of time is being delivered to sustain the user's interest level.

Some of the challenges solved by this invention are methods for displaying information quickly and efficiently to the user and methods for exchanging information between the user and the remote computer (game server) which make possible the commercial exploitation of gaming simulation and the like. These methods are embodied in software. The software gives the computers used to execute it, new capability to be commercially useful in ways not possible before the invention.

In this specific example, the initial game display is in the form of a slot machine. In the examples provided in this specification, an implementation of the invention will be explained in terms of a simulation of a single line multi-reel machine. It will appreciated that the method of display and information management for a simulation of a multi-line machine or a machine of any number of reels is merely a logical extension of the principles discussed and applied for a single line machine simulation. The object of the game, in either event is for the player to get two or more consecutive symbols on a win line. However, a particular pay out may be represented by different permutations of display symbols. For example, a display of two oranges in line one or two apples in line three may both be two to one (2:1) pay outs.

An Internet implementation of the invention requires a player to operate a personal computer ("PC") which is connected to the Internet, for example by a dial-up modem to a service provider. The player's computer runs a client program, for example a World Wide Web (web) browser which is enabled to execute Java applets, small applications which may be sent via the Internet network. A Web site operator maintains a Web site on an Internet server which facilitates communications between the user's applet and a game server which is also in communication with the site's Internet server.

In this example, the player first directs the browser to the operator's site. If required by the user, the slot machine simulation applet may be downloaded by requesting it from the operator's site. The applet once downloaded in the form of an executable file is then installed by the player.

The first session may begin with the applet installed and the browser displaying a WWW page or pages which identify the site and assists the player to register by establishing a virtual account. Registration, in addition to establishing a virtual account with the operator, requires the player to identify himself in a way which is both unique and suitable for the sponsors commercial and legal needs. The funds for using the system may be initially credited from a player's credit card account, bank account or by some other method such as a pre-paid account. Registration may entail verification of the user's email address. This is done by sending a verification number to the user by email, then requesting that number for registration. Successful registration results in the player being able to interact with the operator's game server.

Once a user is successfully registered and the Java applet installed and running, the user's PC displays a slot machine image as shown in Figure 1. The applet initially displays, for example, a three reel machine having a pull handle. Because the applet lacks the processing ability to

generate a final result for the user without recourse to the game server, the initial data supplied to the applet is said to be incomplete. When the applet is first opened, it issues a request or a series of requests which are ultimately answered (completed) by the game server. A first request is answered with a reply from the game server specifying the size of the player's purse and the currency being used. A second request is answered by the game server with information used by the game server to configure itself to handle the particular game. This is referred to as a croupier configuration file. This file provides information or data to the applet about the specifics of the simulation such as the pay-out table or the required appearance of the user's display, for example the ordering of the symbols on the reels. The first two requests may be combined.

By using his personal computer's mouse to position the operating system's cursor over the handle or a graphically displayed button, a user's mouse click is interpreted by the applet as a command to do two things: (a) begin the graphical and audio presentation which entertains the user and (b) issue a third type of request. This third type of request is for a "ticket".

As suggested above, a "ticket" is a digital electronic message which provides, when decoded, data in a pre-determined format which can be interpreted by the applet for the purpose of concluding the entertainment, displaying a specific result and displaying the appropriate accounting information. By ticket we also mean data containing enough information for the game to be played to conclusion by the player, this same data being fully deterministic of the outcome so that the game result may be accounted for by the sponsor before the ticket is issued to the player.

Note that the first time during a session that a request is made, the user's applet requests a socket connection directly with the operator's game server. If the request is successful, the remainder of the session is handled by direct socket TCP/IP communication between applet and game server. If the request is unsuccessful, then the applet makes the request by sending an HTTP URL (hypertext transfer protocol uniform resource locator) to the operator's WWW server. In this case the WWW server then forwards the URL to the game server and the game server responds in HTTP with data to the WWW server which forwards this in HTTP to the applet.

As mentioned above, the "pull" of the handle or a press of the spin button initiates a graphical and audio presentation which includes a first sound to simulate the pulling of the handle of a conventional slot machine. The presentation also includes a graphic display which simulates the movement of symbols on the reels of a conventional machine. In the beginning and the end of a presentation when the reels are static on a conventional machine, the Java applet displays static images of an individual symbol (cherry, orange, apple etc.) in those spaces which represent the windows to the reels. However, when the Java applet displays simulated reels in rotary motion, it displays a rapid sequence of static images which have been intentionally blurred in the simulated direction of rotation. The sequential display of static blurred images of different symbols gives rise to the visual illusion of rotational motion or spinning of the reel or reels. The simulated spinning is accompanied by a second sound which represents the sound of spinning reels in a conventional machine.

While or before the reel motion simulation display begins the applet has issued a request for a ticket. The ticket request may contain both "general" and "specific" data. General data

comprises, for example, user identification information, request identification number, the total wager, the game identification and other information. Specific data in the request may include, for example, the wager amount, the state of the game (particularly in multi-state games like black-jack) the type of wager made by the user, specific information about the user's display, selected options or configuration as will be explained below. The user's ability to request a ticket may be conditional on factors such as successful registration, use of the user's correct identification and password and having sufficient funds on account.

If the user's request for a ticket is honoured, the game server responds by using one or more random numbers to determine the outcome of the request then issuing a ticket containing outcome and other information. As mentioned before, the ticket contains the ultimate result and enough information for the game to be displayed to conclusion by the player's applet. The ticket may contain general data and specific data. This same ticket data being deterministic of the outcome is interpreted by the game server and used to update the game server's database including the user's account. In short, the outcome of the game is recorded and accounted for by the game server before the ticket is received by the user. The pay out, including bonus (if any and as explained below) is determined by the game server by using random number(s) in a specific algorithm to determine if a win is achieved. If so, a pay table is used to determine the pay out.

The general data in the ticket may include information which identifies the game server or virtual dealer, the receipt identification number (which identifies the transaction), user identification information, the amount won, game state, request ID, error status, a flag for special circumstances (such as a major win), the user's purse value (account total) and other information of a general nature. The specific ticket data may include information describing the final display parameters including an indication or specification of the stopped reel display symbols, the win lines won on a multi-line machine simulation, the win amounts for each winning line, information about the award of a bonus and information about the substitution of symbols (see below).

The applet interprets the ticket and extracts from it an indication of which positions its virtual reels should stop at and therefore which characters should be displayed. If a win is indicated, the applet may also cause, for example, the sound associated with the spinning wheels to cease, a new win-indicative sound or sequence of sounds to be emitted by the user's PC, the display to cease the spinning reel depiction, the display to depict a static reel display in accordance with the method described above, and the display to depict the user's updated virtual account information and other information associated with a win. A winning display is shown in Figure 2.

Of course if the ticket does not indicate a win, the applet will select and cause to be executed, sound and display information consistent with a non-winning ticket.

In a preferred embodiment, the Java and game server software is adapted to a bonus feature. In one example of a bonus feature, the game server includes, in the specific data of the ticket, an indication of whether or not the user's win will be displayed as a bonus game. If so, the user's account is updated accordingly and the user's applet responds by altering the user's display and sounds etc. accordingly.

In one example of bonus display, one of the user's allotted display symbols is selected at random by the applet at the beginning of play. The identity of that symbol is preferably included in the specific data of the request. That identity may be used, in one method, by the game dealer for the purpose of determining if a bonus game is to be awarded. In the moving reel display which begins with the user pulling the virtual handle the sequence of blurred symbols lacks entirely the selected symbol and in its place is displayed a blurred bonus symbol image. For example a blurred leprechaun could be displayed in the animation sequence instead of a blurred cherry image. If the ticket is indicative of a bonus award, the applet causes the appropriate bonus display of static leprechaun images and sound to be generated. A bonus winning display is shown in Figure 2. If required by the ticket, the applet reverts to the selected symbol static image for the display of the result.

A bonus display would begin, for example as a cessation of the moving reel sequence and a static display of the two or three bonus symbols indicative of the bonus win. The applet then may cause the display to be altered to depict a bonus animation from which the user is notified of the amount, if any associated with the bonus award. In preferred embodiments the bonus animation is entirely different to the slot machine display and therefore is entertaining, new and different to the user. In one embodiment of a different bonus animation, the display depicts a landscape, for example an Irish landscape with a cottage as shown in Figure 3. This image is known to the player to be a map. Movement of the cursor of the user's PC over the map causes, for example, the user's cursor or display to change when the cursor is positioned over an active region of the map which is associated with a valid selection. If the user makes a valid selection by clicking on a valid region, the display is altered by the applet. The display alteration tells the user the amount of the award. For example, the user moves the cursor over a hay stack. The cursor changes (or the map display changes) to indicate that the cursor is in a selectable region. The user clicks to select a region and the display is altered to reveal a rainbow, a pot of gold or other winning motif or animation. Simultaneously, the applet causes a winning sound or sound sequence to be generated by the PC and the display of the user's account information is updated. This is shown in Figure 4. After a predetermined interval or on command by the player (from keyboard or mouse) the display is returned to the simulation of the slot machine for the beginning of a new instance of play.

A win may be redeemed by a request by a user that all or some of his account be transferred to a bank account or issued as a check or prize. Funds may be moved from the user's credit card or bank account to the user's virtual account at any time by the user.

While the invention has been disclosed with reference to particular embodiments, these should be understood as examples of the novel aspects of the invention and not as limitations to the scope or spirit of the invention.

What is claimed is:

1. A method of displaying a simulation on a PC, comprising the steps of:

> providing a PC user with an applet which has display and Internet communication functionality;
> providing the user with initial data for the applet to use in the display of a presentation, the bulk of that initial data being provided to the user before the applet is used to display the presentation, the data being incomplete;
> operating a game server to communicate with the user's applet;
> maintaining a virtual account for the user, certain data being sent to the user only if the status of the account is satisfactory;
> using the game server to obtain a result in response to a request from the user's applet, the request containing data about the user or the simulation or both;
> using the game server to send a ticket to the applet, the ticket containing data that is representative of the result;
> the game server using the result to modify the user's account;
> the applet using the data in the ticket to complete a presentation to the user comprising at least the visual display of a result and a visual update of the users virtual account.

2. The method of displaying information of claim 1, wherein:

> the applet is capable of working with a Web browser to display a number of different presentations from start to finish, depending on the result indicated by the ticket data, including information about the user's virtual account.

3. The method of displaying information of claim 2, wherein:

> a winning presentation may be followed by a bonus presentation of a different nature and based in part on the initial data if the ticket data so dictates.

4. The method of displaying information of claim 3, wherein:

> an initial display prompted by the Java applet is that of a visual simulation of a slot machine with reels;
> the display having reel windows in which may be depicted graphic symbols selected from a first set of images;
> an initial display in a presentation comprising one symbol image from the first set depicted statically in each window;
> a second display in the presentation comprises an animation simulating a rotary motion

of the reels and comprising a sequence of symbol images in each window;
a third display comprises one symbol image depicted statically in each window:
all the symbol images being generated from the initial data.

5. The method of displaying information of claim 4, wherein:

the second display utilizes symbol images from a second set.

6. The method of displaying information of claim 5, wherein:

the second set comprises symbol images which are akin to the first set, but visually blurred in a direction suggestive of reel motion.

7. The method of displaying information of claim 6, wherein:

the Java applet may alter the display during a presentation by substituting a blurred bonus symbol image for a selected symbol image from the second set and a static bonus symbol image for a selected symbol from the first set.

8. The method of displaying information of claim 7, wherein:

the Java applet causes the request to include the identity of the selected symbol from the first set.

9. The method of displaying information of claim 7, comprising the additional steps of:

indicating in the ticket data, that a bonus is awarded and a bonus display is required;
using the applet to generate a second and different presentation which is consistent with a bonus award ; and
using the applet to display a bonus presentation and bonus outcome.

10. The method of displaying information of claim 9, wherein:

a bonus display is different than the first, second or third displays; and
the bonus outcome is displayed before the applet returns the display to a display like them.

11. The method of displaying information of claim 10, wherein:

the bonus display is a map with active regions; and
where the selection of an active region causes the applet to alter the bonus presentation by altering at least the appearance of the selected region in accordance with the magnitude of the outcome.

12. The method of any of claims 1-11 wherein:

the first, second and third displays are visual simulations of a spinning reel slot machine.

13. The method of claim 12 wherein:

the first, second and third displays are visual simulations of a multi-line slot machine.

14. A method for managing electronic information flow between a Java applet and a game server comprising the steps of:

using the Java applet to generate a request, the request having general data and specific data contained in it;
sending the request by the Internet to a game server;
using the game server to generate a ticket, the ticket containing general and specific data including an outcome;
recording at least the outcome on the game server;
sending the ticket to the applet; and
using the applet to provide a display consistent with the outcome.

15. The method of claim 14, wherein:

the request general data comprising user identification information, the total transaction amount and information about the identity of the game being displayed.

16. The method of claim 15, wherein:

the request general data comprises user identification information, the total transaction amount and information about the identity of the game being displayed..

17. The method of claim 16, wherein:

the request specific data comprises, if required, information about the specific nature of the user's wager.

18. The method of claim 17, wherein:

the request specific data comprises, if required, information about the number of lines bet on a multi-line machine simulation and the wager per line.

19. The method of claim 18, wherein:

the request specific data comprises, if required, information about bonus symbol substitution including the identity of the symbol image for which a bonus symbol image is substituted.

20. The method of claim 14, wherein:

the ticket general data comprises information selected from among the following types: game server or virtual dealer identification, game number, user identification, the amount credited tot the user's account by the game server, error status, flags for special events,

a major win flag, or the user's purse or account total.

21. The method of claim 16, wherein:

the request specific data comprises, information selected from among the following types: the specific nature of the outcome, information from which the applet can compel a display which is consistent with the outcome, which lines are winning lines in a multi-line machine simulation, the win amount for each winning line, information about a bonus award if any and information regarding the display of a bonus display.

FIGURE 1
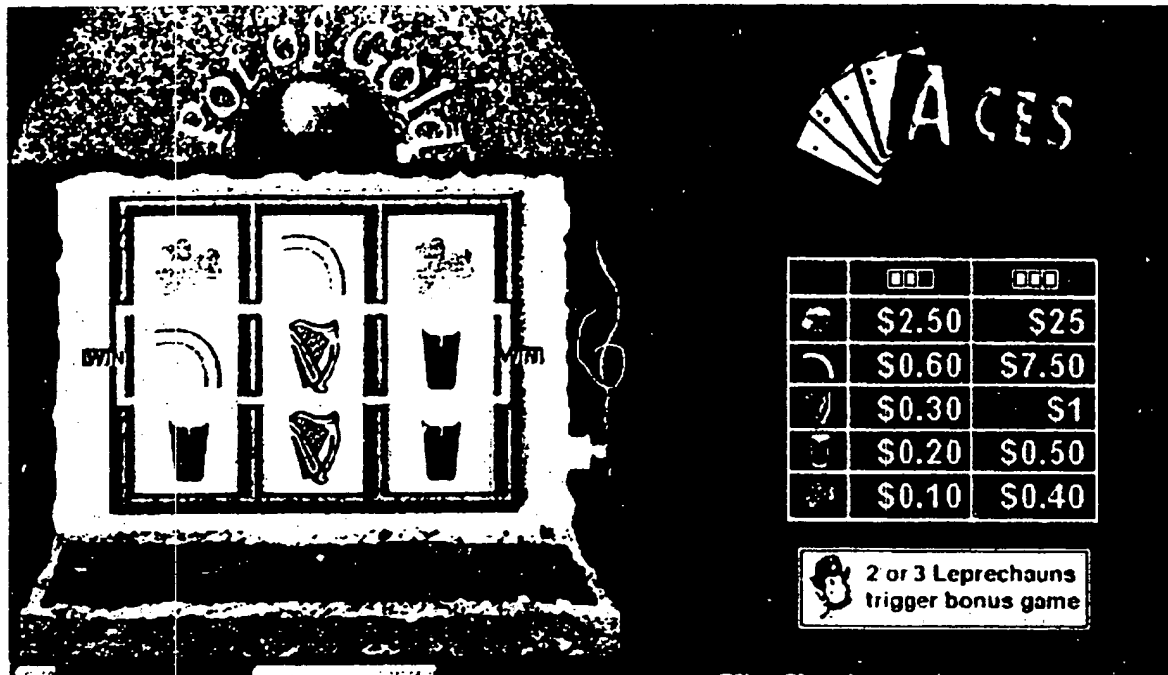
FIGURE 2
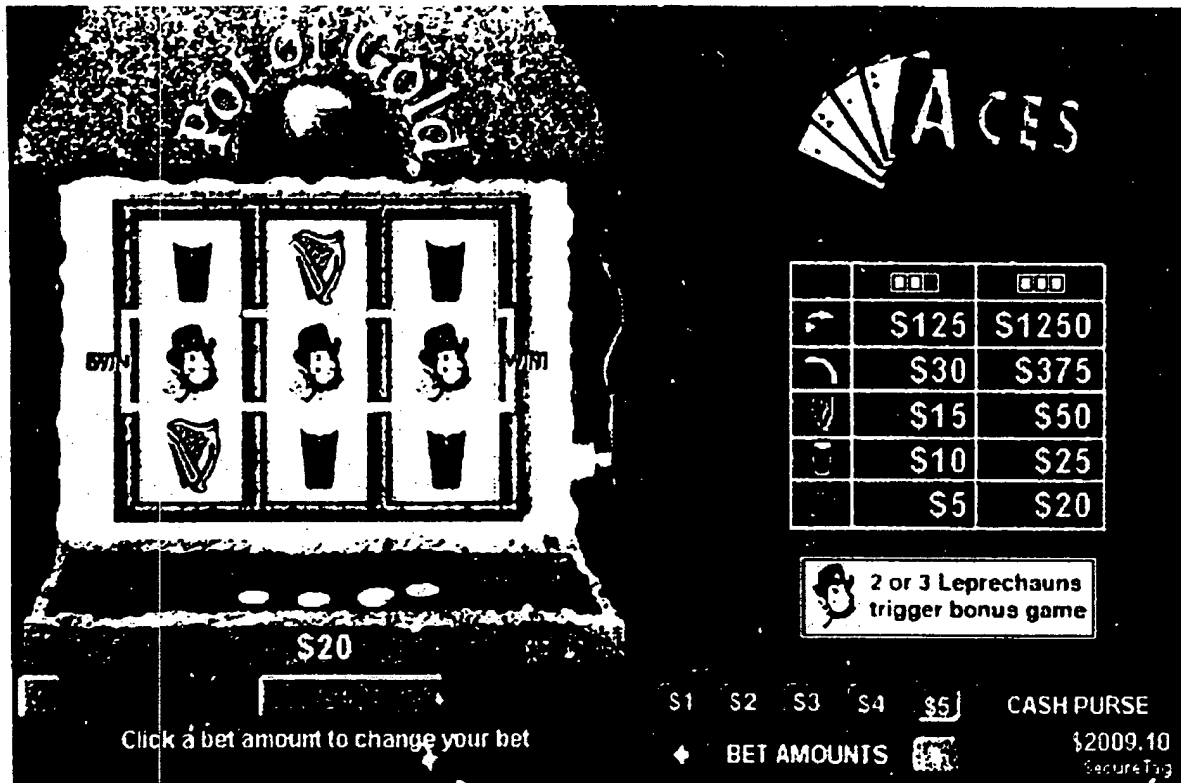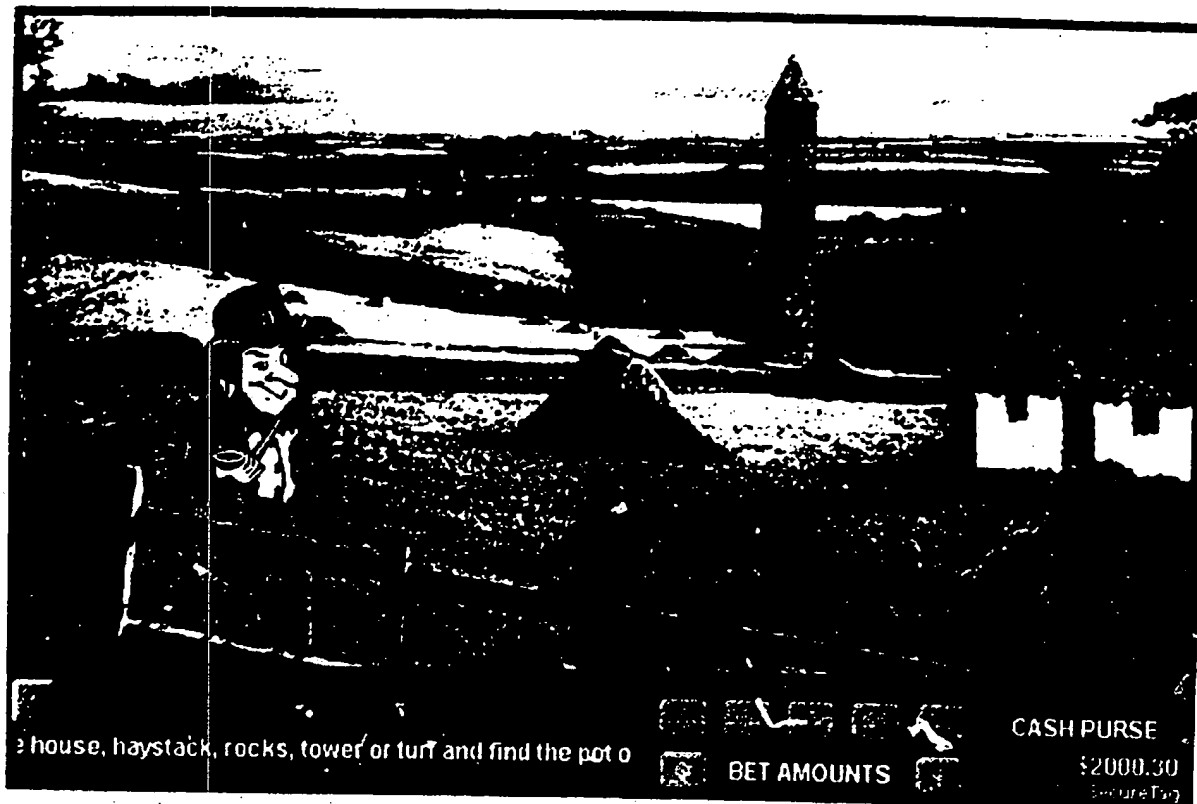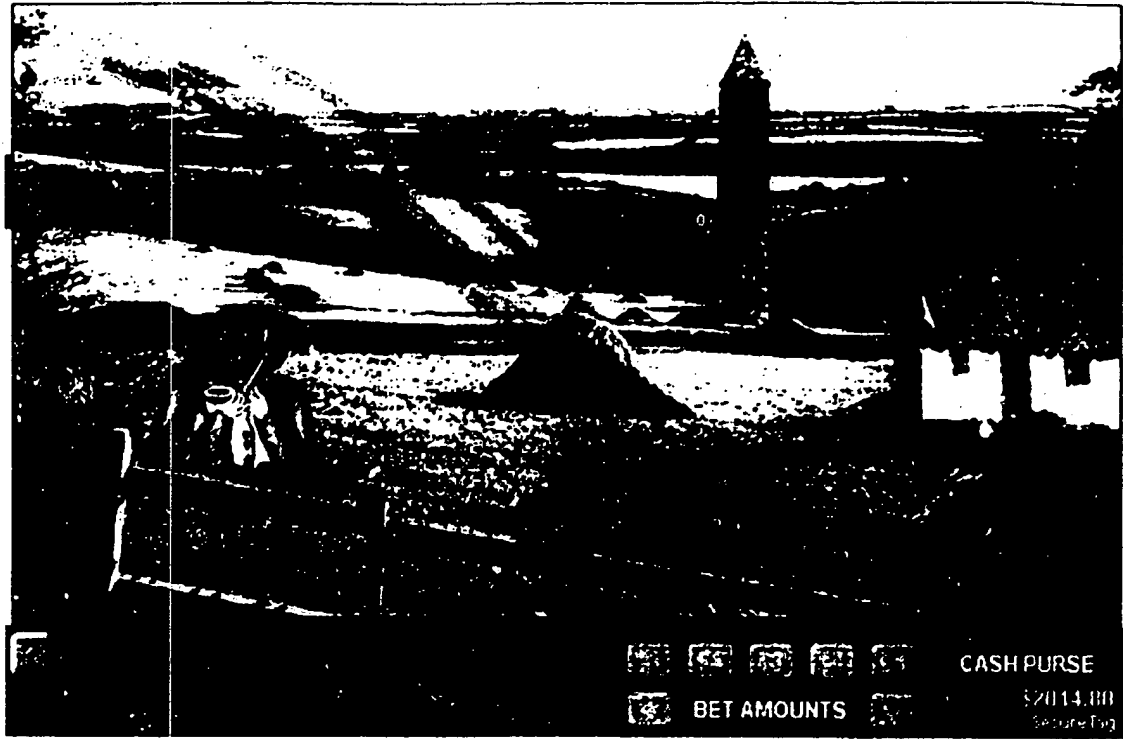
FIGURE 3

FIGURE 4

FIGURE 5

Patent Request : Standard Patent / Patent of Addition

I/We, being the person(s) identified below as the Applicant, request the grant of a patent to the person identified below as the Nominated Person for an invention described in the accompanying standard complete specification.

Full application details follow:

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[54] **Invention Title**

Method, Software and Apparatus for a Robust Simulation of a Slot Machine Game

[72] **Name(s) of actual inventor(s)**

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Associated Provisional Application(s) Details

[60] **Application Number(s) and Date(s)**

Application Number	Date of Application
P O 5757	2L 03 97

Basic Convention Application(s) Details

[31] Application Number	[33] Country	Country Code	[32] Date of Application

Divisional Application Details

[62] Original application number

Patent Invention Details (Patent of Addition requests only)

[61] Application number   Patent number

Drawing number recommended to accompany the abstract

Signature   Brian Tuckedale   Date 20 8 98
Company Secretary

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Notice of Entitlement
(To be filed before acceptance)

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Section 29(1)
Regulation 3.1(2)

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being the applicant in respect of Application No: PO 5757

State the following:-

Part 1 - Must be completed - *For all Applicants*

The person(s) nominated for the grant of the patent:

☒ *is/*are the actual inventor(s)

or

☐ *has entitlement from the actual inventor(s) *(please insert name(s))*

Stephen Patrick Mulcahy, Scott Robert Finlayson, Michael Neil Low

Part 2 - Must be completed - *If the Application is Associated with one or more Provisional Applications*

The person(s) nominated for the grant of the patent:

☐ *is/*are the applicant(s) of the provisional application(s) listed on the patent request form

or

☐ *has entitlement to make a request under Section 113 in relation to the provisional application(s) listed on the patent request form:

Contact Phone No 9957 1036   Fax No 9959 5111

20 / 08 / 98

Signature(s)   Date

(if the applicant is a Company or other legal entity, also indicate the name and standing of the authorised signatory)

Note: Use Form P/00/008(b) where details for PCT, convention priority, microorganism deposit, additional or divisional application, are required.

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